

Name:
Period:

Date:
Worksheet: Charles' Law

1. Calculate the decrease in temperature when 2.00 L at 20.0 °C is compressed to 1.00 L.
2. 600.0 mL of air is at 20.0 °C. What is the volume at 60.0 °C?
3. A gas occupies 900.0 mL at a temperature of 27.0 °C. What is the volume at 132.0 °C?
4. What change in volume results if 60.0 mL of gas is cooled from 33.0 °C to 5.00 °C?
5. Given 300.0 mL of a gas at 17.0 °C. What is its volume at 10.0 °C?
6. A gas occupies 1.00 L at standard temperature. What is the volume at 333.0 °C?
7. At 27.00 °C a gas has a volume of 6.00 L. What will the volume be at 150.0 °C?
8. At 225.0 °C a gas has a volume of 400.0 mL. What is the volume of this gas at 127.0 °C?
9. At 210.0 °C a gas has a volume of 8.00 L. What is the volume of this gas at -23.0 °C?
10. The temperature of a 4.00 L sample of gas is changed from 10.0 °C to 20.0 °C. What will the volume of this gas be at the new temperature if the pressure is held constant?
11. Carbon dioxide is usually formed when gasoline is burned. If 30.0 L of CO₂ is produced at a temperature of 1.00×10^3 °C and allowed to reach room temperature (25.0 °C) without any pressure changes, what is the new volume of the carbon dioxide?
12. A 600.0 mL sample of nitrogen is warmed from 77.0 °C to 86.0 °C. Find its new volume if the pressure remains constant.
13. What volume change occurs to a 400.0 mL gas sample as the temperature increases from 22.0 °C to 30.0 °C?
14. A gas syringe contains 56.05 milliliters of a gas at 315.1 K. Determine the volume that the gas will occupy if the temperature is increased to 380.5 K
15. A gas syringe contains 42.3 milliliters of a gas at 98.15 °C. Determine the volume that the gas will occupy if the temperature is decreased to -18.50 °C.
16. When the temperature of a gas decreases, does the volume increase or decrease?
17. If the Kelvin temperature of a gas is doubled, the volume of the gas will increase by ____.